SPECTROSCOPIA MOLECULAR

UN PERIODICO MENSUAL DE NOVAS E INFORMATIONES DE INTERESSE E VALOR AL SPECTROSCOPISTAS MOLECULAR

Volumine 6 | Martio 1957 | Numero 59

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SPECTROSCOPIA MOLECULAR ha essite redigite e publicate mensualmente depost Maio 1952 per Prof. Forrest F. Cleveland del Departimento de Physica del Instituto Technologic de Illinois in Chicago. Pro assecurar un plus facile lectura per le plus grande numero del spectroscopistas, le periodico es scribite in le lingua international, Interlingua. Manuscriptos e novas e informationes, tanto como abonamentos e ordines pro monographias, debe esser inviate a

Spectroscopia Molecular
Departimento de Physica
Instituto Technologic de Illinois
Chicago 16, Illinois, S. U. A.

Le texto original es legite per Dr. Alexander Gode, Chef del Division de Interlingua de Science Service (80 East 11th St., New York 3, N. Y., S.U.A.). Libros super Interlingua, disponibile ab ille adresse, es Interlingua-English Dictionary, Interlingua Grammar, Interlingua A Prime Vista, Interlingua in 20 Lektionen, Interlingua en 20 Leçons, Interlingua in 20 Lezioni, e Homo Sonetticus Moorensis (un bellemente imprimite parve libro de poemas con illustrationes).

Labor editorial es gratis. Le costo de preparation e distribution es recipite ab spectroscopistas, bibliothecas, e companias que beneficia del existentia de Spectroscopia Molecular. Il ha nulle altere medios de supporto. Omne le receptas es usate pro le mantenimento e melioration del periodico.

Assistentes de publication es Srta. Blanche Cohen e Srs. Jerome M. Dowling e Edward A. Piotrowski. Le imprimer es facite per Don Swengel e per Jean, Lilly, Chicki, e Alice del Servicios de Bureau al Instituto Technologic de Illinois sub le direction de Srta. Virginia Brown.

Il ha 12 numeros per anno e le precio de abonamento es $2.25 nette ($2.00 si pagamento accompania le ordine). Volumines passate del annos 1952, 1953, etc. es $3.00 nette per volumine. Numeros individual es $0.25 per cata un. Le periodico pote esser inviate per posta aeree si le subscriptor provide le costo de postar additional. (Face cheques pagabile a "Spectroscopia Molecular".)

Companias pote attachar un pagina de informationes in re lor productos, si illos es de interesse a spectroscopistas molecular.

MONOGRAPHIAS. Duo monographias es disponibile. Illos es:

Spectros Molecular. I. Regulas de Selection pro Spectros Vibrational de Moleculas Polyatomic, per Forrest F. Cleveland, 1953, 25 paginas, $0.75 nette.

Spectros Molecular. II. Tractamentos del Coordinatas Normal de Moleculas Polyatomic, per Salvador M. Ferigle e Alfons Weber, 1955, 30 paginas, $1.00 nette.

SPECTROSCOPIA MOLECULAR

.Un bulletin mensual de novas e informationes de interesse e valor al spectroscopistas molecular

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SYMPOSIO ES TENITE AL UNIVERSITATE OSAKA

K o y o A i d a

U N symposio spectroscopic esseva tenite al Universitate Osaka in octobre 1956. Le discursos presentate esseva:

1) Simple methodos pro le calculation del frequentias vibrational pro le vibrationes extra le plano del atomos H in compositos aromatic. SHIMANOUCHI, Universitate Tokio;

2) Vibrationes extra le plano del gruppo C-H que es permittite in le spectro Raman pro le benzinas substituite. KAKIUCHI, Universitate Rikkyo;

(Continuate al pagina 14, columna 1)

Professor R. A. Oetjen parla al Universitate Osaka.

N U L L E precaution human pote proteger un nation ab le sacrificios que es levate per le guerra super le talento futur — le scientistas indiscoperite, le mentes extraordinari, le conductores intellectual e spiritual super le quales cata generation debe construer le spero e le promissa del generation sequente.

-- R. B. FOSDICK, Presidente
Le Fundation Rockefeller
Un Revista Pro 1939.

3) Spectros Raman de un systema que contine chloroformo e ammoniaco liquide. AIDA, Universitate Tohoku;

4) Le effecto de solventes e le influentia del ligamine de hydrogeno super le vibrationes extra le plano del gruppo C-H in le anulo de benzina. OOI, Le Compania Sumitomo;

Koyo Aida (al dextra) con un amica e un amico.

5) Assignationes del spectros Raman e infrarubie del methano de tetramethylo e del silano de tetramethylo. MURATA, Instituto de Recerca Osaka;

6) Le structura del butano de 2-halogeno. NAKAMURA, Dainippon seiyaku;

7) Le spectro infrarubie del alcohol de polyvinylo. TADOKORO, Universitate Osaka; e

8) Le spectroscopia infrarubie -- Le passato, le presente, e le futuro. OETJEN, Universitate Ohio State.

Professor Yonezo Morino del Universitate Tokio etiam es presente al symposio ⟶

SPECTROSCOPISTAS MOLECULAR EUROPEE VA CONVENIR IN FREIBURG

A L P L U S recente assemblea convenite in Paris del Commission Pro Spectroscopia Molecular del Union International de Chimia Pur e Applicate, il esseva decidite que le sequente convention del spectroscopistas molecular europee va occurer a Freiburg in Breisgau (Germania) ab le 9 al 13 de julio.

Discursos principal essera super le themas:

1) Mesurationes de intensitates in le infrarubio;
2) Spectroscopia microundic;
3) Mesurationes del resonantia nucleari magnetic; e
4) Spectroscopia molecular ultraviolette in vacuo.

In addition, il habera un numero de breve discursos contribuite per recercatores in spectroscopia. Istos deberea tractar de labor que es nove e preferibilemente ancora non publicate.

Plus informationes es disponibile ab Prof. R. Mecke, Instituto de Chimia, Universitate Freiburg, Hebelstrasse 38, Freiburg i. Br., Germania.

NOVAS E MISCELLANEA

GEORGE R. HARRISON del Instituto Technologic de Massachusetts va reciper le 1me Precio Spectroscopic Pittsburgh le 6 de martio. Iste precio es date per le Societate Spectroscopic Pittsburgh a scientistas qui ha facite contributiones distinguite al spectroscopia.

-o-

LE SOCIETATE COBLENTZ nunc ha 936 membros. Illes qui ha un interesse in le spectroscopia infrarubie e desira junger se a iste societate debe scriber a Dr. Van Zandt Williams, Registrator; Division de Instrumentos, Corporation Perkin-Elmer, Norwalk, Conn., S.U.A.

(continuate al p. 16, columna 2)

CURSO VA ESSER DATE IN LE SPECTROSCOPIA INFRARUBIE

U N PROGRAMMA intense in le spectroscopia infrarubie va esser date ab le 17 al 28 de junio al Instituto Technologic de Massachusetts. Isto es designate pro illes qui desira un introduction al instrumentation infrarubie e al methodos laboratorial, e pro illes qui es interessate in le uso del spectros infrarubie in le solution de problemas chimic.

Le programma consistera de 2 cursos integrate, cata un de 1 septimana in duration. Istos es:

1) Technicas del spectroscopia infrarubie, e
2) Applicationes del spectroscopia infrarubie.

Ambes essera sub le direction de Dr. R. C. Lord, chef del laboratorio de spectroscopia al I. T. de M. Ille essera assistite per Dr. F. A. Miller del laboratorio de spectroscopia al Instituto Mellon de Recerca Industrial, e per Prof. E. R. Lippincott del departimento de chimia al Universitate Maryland.

Altere specialistas qui participara es Dr. R. N. Jones del division de chimia pur al Consilio National de Recerca de Canada e Dr. W. J. Potts del laboratorio de spectroscopia al Compania Chimic Dow.

Le Curso Super Technicas

IN LE curso super technicas (junio 17-21), il habera discursos dedicate al theoria elementari del spectros infrarubie, al revista del instrumentation infrarubie, e al technicas pro le mesuration del spectros.

Exercitios laboratorial essera facite in le postmeridies per parve gruppos con un varietate de instrumentos infrarubie. Iste labor essera sub le direction de personal academic experte ex le laboratorio de spectroscopia al

(continuate al p. 17, columna 1)

SPECTROS MOLECULAR. III.
TRACTAMENTOS DEL COORDINATAS NORMAL DE MOLECULAS POLYATOMIC
B. APPLICATIONES SPECIFIC

Forrest F. Cleveland, Arnold G. Meister, e Fred L. Voelz
Instituto Technologic de Illinois, Chicago 16, Illinois, Statos Unite de America

Parcella 13; continuate ab Spec. Mol. 6 (1957) 11

5E. Calculation del Frequentias de CD_4

L E FREQUENTIAS de CD_4 esseva calculate per substituer μ_D pro μ_H in le matrices G del molecula CH_4 e usar le nove elementos de matrice in Eqs. 5D1, 5D2, e 5D4. Le valores obtenite es comparate in Tabula 5E1 con illos calculate per Dennison[12] con un methodo differente. Malgrado le expression approximative pro le energia potential, le concordantia es rationabilemente satisfacente. Un alique melior concordantia poterea esser obtenite per parve cambiamentos in le constantes del energia potential.

Tabula 5E-1. Comparation del presente numeros de undas calculate del molecula CD_4 con le valores obtenite per Dennison con un methode differente.

Frequentia	Numero de undas σ in kaysers	
	Presente	Dennison
$\vartheta_1(a_1)$	2151	2143,2
$\vartheta_2(e)$	987	983,4
$\vartheta_3(f_2)$	2335	2336,9
$\vartheta_4(f_2)$	1019	1026,4

6. SUMMARIO DEL METHODO

L A S S A NOS summarisar le passos principal pro applicar le methodo de Wilson al calculation del frequentias vibrational de un molecula. Primo, coordinatas de symmetria orthonormal (i. e. coordinatas que es e orthogonal e normalisate) es formate. Illos es combinationes linear de coordinatas interne equivalente que se transforma secundo le characteres del typo de vibration concernite.

Ex le matrices U obtenite ex iste coordinatas de symmetria, e ex le matrice f obtenite ex le energia potential exprimite in terminos del coordinatas interne, on obtene le matrices F pro le typos de vibration differente.

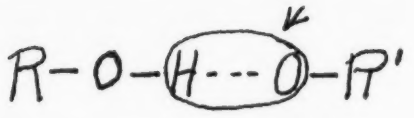
Pro obtener le matrices G, on primo calcula le vectores $\underline{s}_{ik}$ ex le expressiones general que involve vectores unitari dirigite secundo le ligamines chimic. Tunc le vectores $\underline{S}_j^t$ es formate ex le coefficientes U_{ik} e le vectores $\underline{s}_{ik}$. Le elementos del matrice G tunc es obtenite ex le productos scalar del vectores $\underline{S}_j^t$.

Finalmente, per le uso de iste matrices F e G, le equationes secular pro le varie typos de vibration es scribite in le forma expandite, e le frequentias vibrational (o le numeros de undas correspondente) es calculate ex iste equationes.

(Va continuar in un numero futur)

. . . NOVAS E MISCELLANEA . . . . .
(continuate ab p. 15, columna 1)

ERRORES: (1) In Spec. Mol. 5 (1956) 58, cambia "Toronto 2" a Toronto 5. (2) In Spec. Mol. 6 (1957) 4, cambia "$\sigma = 1/$ " a $\sigma = 1/\lambda$.



. . . CURSO SUPER SPECTROSCOPIA . . . .

(continuate ab p. 15, columna 2)

I. T. de M. e de personal ab le companias que fabrica equipamentos infrarubie.

Le Curso Super Applicationes

LE CURSO super applicationes (junio 24-28) va coperir le theoria del absorption infrarubie per moleculas, le interpretation del spectros de absorption infrarubie, e le relation inter le spectros e le structura molecular.

Attention particular essera prestate al hydrocarburos, alte polymeros, productos natural, e altere substantias cuje spectros infrarubie ha importantia special.

Le postmeridies essera dedicate al practica in le interpretation del spectros infrarubie de moleculas complexe, sub le direction de personal experimentate.

Instruction in le uso del catalogos de spectros infrarubie que es generalmente disponibile e in le methodos de cartas perforate etiam essera date.

OMNE le facilitates del Instituto essera disponibile al membros de iste cursos in spectroscopia. Le aere in le salas del discursos, laboratorios, e bibliothecas essera "climatisate" (frigidate, filtrate, e dishumidificate). Registrantes pote reservar cameras in le dormitorios del Instituto pro uso durante le programma.

Formularios de application e informationes complete pote esser obtenite ab Dr. J. M. Austin, Chef del Session de Estate, Sala 7-103, Instituto Technologic de Massachusetts, Cambridge 39, Mass., S. U. A.

LE EXISTENTIA de iste periodico depende del receptas financiari ab spectroscopistas, bibliothecas, e companias.

SYMPOSIO SUPER LE LIGAGE HYDROGENIC VA ESSER TENITE IN LJUBLJANA IN JULIO

U N SYMPOSIO super le ligage hydrogenic va esser organisate per le Union del Societates Chimic de Yugoslavia sub le egide del Union International de Chimia Pur e Applicate.

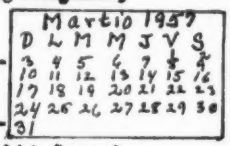
Le symposio essera tenite a Ljubljana in Yugoslavia inter le 30 de julio e le 3 de augusto.

Omne aspectos del ligage hydrogenic essera includite. Inter illos es:

1) Le spectroscopia Raman, infrarubie, e ultraviolette;
2) Le crystallographia;
3) Le proprietates dielectric;
4) Tractamentos theoric; e
5) Le influentia del ligage hydrogenic super le varie processos physicochimic.

Le discursos e discussiones va esser dividite in plure sectiones con un discurso introductori per un autoritate in cata campo.

Plus detalios pote esser obtenite ab Dr. D. Hadži, Kemični Inštitut Borisa Kidriča, Slov. Akademije Znanosti in Umetnosti, Hajdrihova 19, Ljubljana, Yugoslavia.



C A L E N D A R I O

**MARTIO 4-8. Conferentia Pittsburgh super le chimia analytic e le spectroscopia applicate. Pittsburgh, Penna. (L. M. Melnick, U. S. Steel Corp., Applied Research Lab., Monroeville, Pa.)

**MARTIO 7. Assemblea del Societate Coblentz al Conferentia Pittsburgh. 8:00 P. M.

**MARTIO 19. Societate de Spectroscopia Applicate, Section Philadelphia. Britton Chance del Universitate Pennsylvania va parler super studios spectrophotometric del enzymas in cellulas vivente.

(continuate al p. 18, columna 2)

N O V E L I B R O S

Physical Techniques in Biological Research. Volume I. Optical Techniques (Technicas Physic in le Recerca Biologic. Volumine I. Technicas Optic). Redigite per GERALD OSTER e ARTHUR W. POLLISTER. Academic Press, 111 5th Ave., New York 3; o Academic Books, 129 Queensway, London W.2; o Minerva G.m.b.H., Holbeinstrasse 25, Frankfurt am Main, Germania; 1955. Ps. 564. Precio $13.50.

I s t e libro contine inter alteres capitulos super:
1) Spectroscopia Absorptionic, C. F. HISKEY, Instituto Polytechnic Brooklyn;
2) Spectrophotometria Absorptionic Ultraviolette, JESSE F. SCOTT, Hospital General Massachusetts; e
3) Spectrophotometria Infrarubie, CARL CLARK, Universitate Illinois.
Un recension plus detaliate es date per W. R. BRODE in J. Opt. Soc. Am. 47 (1957) 108-109.

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The Solar Spectrum from 2.8 to 23.7 Microns. Part I. Photometric Atlas (Le Spectro Solar ab 2,8 a 23,7 Microres. Parte I. Atlas Photometric). M. MIGEOTTE, L. NEVEN, e J. SWENSSON. Geophysics Research Directorate, Air Force Cambridge Research Center, Bedford, Mass., S.U.A., 1956. Reporto technic final. 77 Ps., 30 x 60 cm.

O b s e r v a t i o n e s facite al Station Scientific International de Jungfraujoch in Switza es continite in iste bellemente inprimite libro. Isto es un extracto del "Memoires de la Societe Royale des Sciences de Liege", Volumine Special, No. 1, 1956.

Photographias del laboratorio sur le Jungfraujoch e un diagramma e photographias del spectrographo e equipamentos es date in Figuras 1-6. Isto es sequite per un introduction de 6 ps. (in francese e etiam in anglese). Tunc es date le 118 curvas infrarubie.

C A L E N D A R I O

(continuate ab pagina 17, columna 2)

**APRIL 29-MAIO 1. 8ve symposio annue super spectroscopia. Association American de Spectrographos. Chicago. (T.H. Zink, 4528 W. Division St., Chicago 51, Illinois.)

**APRIL 24-26. Colloquio annue super atomos e moleculas ex le recerca radioelectric. St. Malo, Brittany, Francia. (Prof. R. Freymann, Universitate Rennes, Rennes, Francia.)

**JUNIO. Curso laboratorial super le spectroscopia infrarubie applicate. Instituto Polytechnic de Brooklyn, Brooklyn, New York, S.U.A.

**JUNIO 10-14. 11me symposio annue super le spectroscopia e le structura molecular. Columbus. (H. H. Nielsen, Universitate Ohio State, Columbus 10, Ohio)

**JUNIO 17-28. Programma super le spectroscopia infrarubie: (1) Technicas (junio 17-21), (2) Applicationes (junio 24-28). (J. M. Austin, Summer Session Director, Room 7-103, Massachusetts Institute of Technology, Cambridge 39, Mass., S.U.A.)

**JULIO 8-10. 8ve symposio international de astrophysica. Thema: Lineas de Emission — Stellas. Liege. (P. Swings, Instituto de Astrophysica, Universitate Liege, Liege, Belgica.)

**JULIO 9-13. Symposio del gruppo europee de spectroscopistas molecular. Freiburg, Germania. (R. Mecke, Instituto de Chimia, Hebelstrasse 38, Freiburg in Breisgau, Germania.)

**JULIO 30-AUGUSTO 3. Symposio super le ligage hydrogenic. Ljubljana, Yugoslavia. (D. Hadži, Kemični Institut Borisa Kidriča, Slov. Akademije Znanosti in Umetnosti, Hajdrihova 19, Ljubljana, Yugoslavia.)

**1958. Commission Juncte de Spectroscopia. Moscova, U.S.S.R.; o Ottawa, Canada. (P. F. A. Klinkenberg, Laboratorio Zeeman, Muidergracht 4, Amsterdam C, Hollanda.)

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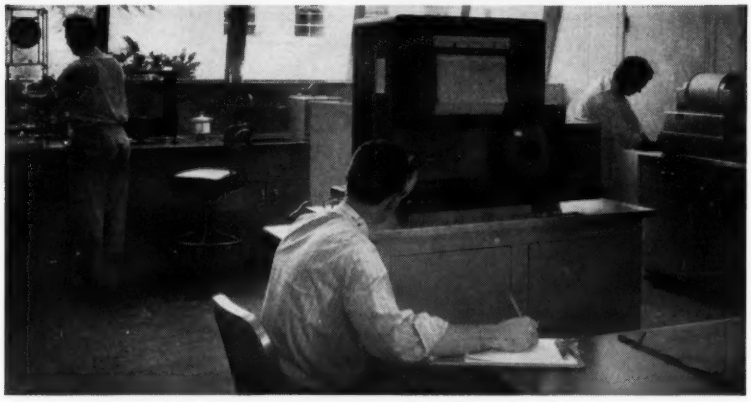

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FREE BULLETIN

If your spectrophotometer applications are in the visible or ultraviolet range, investigate the many advantages of the Cary Model 11. For complete information write to Applied Physics Corporation, 362 West Colorado Street, Pasadena 1, California, for Bulletin CN-15.

Reprinted from November 5, 1956 CHEMICAL & ENGINEERING NEWS